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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/827,207	04/16/2004	Allen Olson	110630-002UTL	2334
27189 7590 10/25/2007 PROCOPIO, CORY, HARGREAVES & SAVITCH LLP 530 B STREET SUITE 2100 SAN DIEGO, CA 92101			EXAMINER SAUNDERS, PAUL	
			ART UNIT 4136	PAPER NUMBER
			NOTIFICATION DATE 10/25/2007	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/827,207

Applicant(s)

OLSON ET AL.

Examiner

Paul Saunders

Art Unit

4136

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 1-6** rejected under 35 U.S.C. 103(a) as being unpatentable over:
 - a. International Patent Application No. 2001/084209 A2 to *Soenksen*
in view of:
 - b. U.S. Patent No. 6,215,892 B1 to *Douglass et al.* ("*Douglass*"),
 - c. U.S. Patent No. 6,714,281 B1 to *Amano et al.* ("*Amano*").

As to **claim 1**, *Soenksen* discloses a computer 11, 20 implemented (fig. 1, 4, page 25 line 1-9) method for determining the optimal focal height (page 30 lines 14-20, page 40 lines 1-6) for an objective lens 16 coupled with a line scan camera 18 in a virtual microscopy system (page 25 line 20-22) prior to scanning (page 40 lines 17-18) a microscope slide (page 39 line 12-13).

Not expressly disclosed is identifying a plurality of focus points on a microscope slide; positioning an objective lens coupled with a line scan camera over a first focus point; scanning an image of the first focus point at a plurality of

objective lens heights; determining the objective lens height having the greatest contrast in the scanned image.

Douglass discloses identifying a plurality of focus points 80 on a microscope slide 72a (fig. 14, 15, col. 11 lines 41-56); scanning an image of the first focus point 80 at a plurality of objective lens heights (fig. 14, col. 11 lines 57-65).

Soenksen and *Douglass* are analogous art because they are from the same field of endeavor namely computer implemented microscopy systems.

At the time of the invention it would have been obvious to one of ordinary skill in the art to modify the previous pre-scanning focus method to consider multiple focus points at multiple objective lens heights as taught above by *Douglass*. The motivation would have been to provide advantages such as to ensure that focus is maintained accurately and automatically during image scan (col. 11 lines 55-56, 63-65).

Amano discloses scanning an image of the first focus point at a plurality of objective lens heights (fig. 11, 12); determining the objective lens height having the greatest contrast in the scanned image (fig. 12, col. 5 lines 23-41).

Soenksen and *Amano* are analogous art because they solve the same technical problem namely auto focusing a computer implemented microscopy system.

At the time of the invention it would have been obvious to one of ordinary skill in the art to modify the previous auto focusing method of multiple points to

take into account the contrast of the image at multiple objective lens positions when determining the best focus position of the objective lens as taught above by *Amano*. The motivation would have been to provide advantages such as to obtain the best focus (*Amano* col. 5 lines 17-22).

Therefore it would have been obvious to combine *Soenksen, Douglass* and *Amano* to make the above modifications.

As to **claim 2**, *Douglass* further discloses the method of claim 1, further comprising: combining a plurality of objective lens heights into a focal surface; and adjusting the height of the objective lens according to the focal surface during subsequent scanning of the microscope slide (fig. 14, 15, col. 11 lines 41-65).

The same motivation is used here as is used for the parent claim.

As to **claim 3**, *Douglass* further discloses the method of claim 2, wherein the focal surface (focus plane) covers the entire microscope slide 72a (fig. 15).

The same motivation is used here as is used for the parent claim.

As to **claim 4**, *Douglass* further discloses the method of claim 2, wherein the focal surface covers a sub-region of the microscope slide (col. 2 lines 66-67, col. 6 lines 7-10, col. 11 lines 66-67, col. 12 lines 1-13).

The same motivation is used here as is used for the parent claim.

As to **claim 5**, *Douglass* further discloses the method of claim 4, wherein the sub-region substantially corresponds to the area of microscope slide comprising a specimen (col. 2 lines 66-67, col. 6 lines 7-10, col. 11 lines 66-67, col. 12 lines 1-13).

The same motivation is used here as is used for the parent claim.

As to **claim 6**, *Douglass* further discloses the method of claim 4, wherein the sub-region substantially corresponds to an image stripe (fig. 15, col. 9 lines 64-67, col. 10 lines 1-4 – a focal surface of the entire slide at the same time covers and corresponds to sub-region being an image stripe).

The same motivation is used here as is used for the parent claim.

3. **Claims 7, 8** rejected under 35 U.S.C. 103(a) as being unpatentable over:

a. International Patent Application No. 2001/084209 A2 to *Soenksen* in view of:

b. U.S. Patent No. 6,714,281 B1 to *Amano* et al. ("*Amano*").

As to **claim 7**, *Soenksen* discloses a computer 11, 20 implemented (fig. 1, 4, page 25 line 1-9) method for determining the optimal focal height (page 30 lines 14-20, page 40 lines 1-6) in a virtual microscopy system (page 25 line 20-22) prior to scanning (page 40 lines 17-18) a microscope slide (page 39 line 12-

13), the virtual microscopy system having an objective lens 18 coupled to a line scan camera 16 and a stage 14 for supporting a microscope slide 12 (fig. 1), the method comprising: moving the stage in a direction orthogonal to the objective lens (page 53 lines 4-10, 21-22); continuously adjusting the height of the objective lens while the stage is in motion (page 40 lines 17-18 – focusing, as in the height of the objective lens, is a function of the position of the stage); scanning an image of an area on the microscope slide while the stage is in motion (page 54 lines 22-28) and the height of the objective lens is continuously adjusted (page 40 lines 17-18);

Not expressly disclosed is a method for determining an objective lens location having the greatest contrast in the scanned image.

Amano discloses determining an objective lens location having the greatest contrast in the scanned image (fig. 12, col. 5 lines 23-41).

Soenksen and *Amano* are analogous art because they solve the same technical problem namely auto focusing a computer implemented microscopy system.

At the time of the invention it would have been obvious to one of ordinary skill in the art to modify the previous auto focusing method of multiple points to take into account the contrast of the image at multiple objective lens positions when determining the best focus position of the objective lens as taught above by *Amano*. The motivation would have been to provide advantages such as to obtain the best focus (*Amano* col. 5 lines 17-22).

Therefore it would have been obvious to combine *Soenksen* and *Amano* to make the above modifications.

As to **claim 8**, *Soenksen* discloses the method of claim 7, wherein the objective lens 16 location comprises a planar location (xy plane) on the microscope slide 12 and a height (z axis) of the objective lens 24 (fig. 1 – the described movement of the objective lens as the image is scanned and it is adjusted for focus).

2. **Claims 9-13** rejected under 35 U.S.C. 103(a) as being unpatentable over:

- a. International Patent Application No. 2001/084209 A2 to *Soenksen*,
 - b. U.S. Patent No. 6,714,281 B1 to *Amano* et al. ("*Amano*"),
- as applied to claim 7 above, and further in view of:
- c. U.S. Patent No. 6,215,892 B1 to *Douglass* et al. ("*Douglass*").

As to **claim 9**, it has not been expressly disclosed yet: the method of claim 8, further comprising: combining a plurality of objective lens locations into a focal surface; and adjusting the height of the objective lens according to the focal surface during subsequent scanning of the microscope slide.

Douglass discloses combining a plurality of objective lens locations into a focal surface (focus plane, fig. 14 274); and adjusting the height of the objective

lens according to the focal surface during subsequent scanning of the microscope slide 72a (fig. 14, 15, col. 11 lines 41-65).

The same motivation is used here as is used for claim 1.

As to **claim 10**, *Douglass* further discloses the method of claim 9, wherein the focal surface covers the entire microscope slide (refer to claim 3).

The same motivation is used here as is used for the parent claim.

As to **claim 11**, *Douglass* further discloses the method of claim 9, wherein the focal surface covers a sub-region of the microscope slide (refer to claim 4).

The same motivation is used here as is used for the parent claim.

As to **claim 12**, *Douglass* further discloses the method of claim 11, wherein the sub-region substantially corresponds to the area of microscope slide comprising a specimen (refer to claim 5).

The same motivation is used here as is used for the parent claim.

As to **claim 13**, *Douglass* further discloses the method of claim 11, wherein the sub-region substantially corresponds to an image stripe (refer to claim 6).

The same motivation is used here as is used for the parent claim.

Conclusion

2. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 6,049,421 A to Raz et al. teaches a computer implemented microscopy system using a pre-focus scan.

U.S. Patent No. 5,912,699 A to Hayenga et al. teaches a computer implemented microscopy system using a dynamic image strip focal map.

U.S. Patent No. 5,790,710 A to Price et al. teaches a computer implemented microscopy system with multiple focus methods some in consideration of contrast.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Saunders whose telephone number is 571.270.3319. The examiner can normally be reached on Mon-Thur 8:30am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Derrick Ferris can be reached on 571.272.3123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 4136

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/PS/

A handwritten signature in black ink, appearing to read "Derrick W. Ferris", with a date "10/22/07" written below it.

DERRICK W. FERRIS
SUPERVISORY PATENT EXAMINER